

REMARKS/ARGUMENTS

The rejections presented in the Office Action dated November 28, 2006 (hereinafter Office Action) have been considered. Claims 1-23, 44-63, and 71-77 remain pending in the application. Claims 24-43, 64-70, and 78-90 have been withdrawn by the Examiner as being directed to a non-elected invention. None of the claims have been amended, and no claim has been added or canceled. Reconsideration of the pending claims and allowance of the application in view of the present response is respectfully requested.

Claims 1-3, 5-6, 11, 15-17, 44-47, 49-50, 53, 56-57, 60-61, 71, 74, and 76-77 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,484,666 to Gibb et al. (hereinafter "*Gibb*"). Claims 1-3, 8, 11-16, 19, 21, 44, 46-47, 53-55, 57, 60-61, and 71-74 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,620,540 to Sugita et al. (hereinafter "*Sugita*").

To anticipate a claim, the reference must teach every element of the claim. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Therefore, all claim elements, and their limitations, must be found in the prior art reference to maintain a rejection based on 35 U.S.C. §102.

Among other features, each of Applicant's independent claims 1, 44, and 71 recites, in some form, a plurality of registration posts configured for reception within the plurality of registration apertures, each of the registration posts having an outer surface differing in shape from a shape of the inner surface of the registration apertures, the inner surface of the registration apertures contacting the outer surface of the registration posts at a plurality of discrete press-fit locations.

Applicant refers to Figures 7-14 of Applicant's disclosure that show various configurations of registration posts and apertures that provide for contact between the inner surface of the registration apertures and outer surface of the registration posts at a plurality

of discrete press-fit locations. Respectfully, *Gibb* and *Sugita* fail to anticipate Applicant's independent claims 1, 44, and 71, as neither of these references teaches each and every element, and their limitations, recited in these claims.

Gibb discloses a fuel cell stack that employs tie rods 60a, 60b, 60c, 60d that extend through header openings 42, 46, 52, 56, respectively, as well as through openings in the inlet end plate 12 and in outlet end plate 14. Column 6, lines 24-27. As can be seen in Figure 1 and elsewhere, the tie rods 60a, 60b, 60c, 60d are shown biased toward a particular continuous portion of the header openings 42, 46, 52, 56, leaving substantial voids between the tie rods 60a, 60b, 60c, 60d and opposing surfaces of the header openings 42, 46, 52, 56.

Respectfully, the inner surface of the header openings do not contact the outer surface of the tie rods at a plurality of discrete locations. Rather, the Figures of *Gibb* show contact between the outer surface of the tie rods along a single continuous portion of the inner surface of the header openings.

Moreover, the inner surface of the header openings and outer surface of the tie rods do not provide for a press-fit relationship, as the tie rods appear to have ample void space within their respective header openings to accommodate positional shifting of the tie rods. A press-fit relationship between *Gibb*'s tie rods and header openings does not appear possible, given the differing shapes and sizes of the header openings and inlet/output end plate openings through which *Gibb*'s tie rods pass.

Applicant's independent claims 1 and 44 further recite that the respective registration apertures are situated within non-active areas of the MEA when the first and second flow field plates and the MEA are axially aligned within the stack assembly. *Gibb* explicitly teaches and claims its headers are configured in the fuel cell stack so that the header openings extend "through the electrochemically active region" of the membrane(s). Column 8, lines 37-39. See also claims 1, element (c), claim 13, element (d), and claim 25.

With regard to *Sugita*, this reference discloses a fuel cell stack in which rods pass through holes provided in a plurality of fuel cell units and separators. Two rod/hole arrangements are shown. Figures 1-7, for example, show rods having an outer surface

entirely in continuous contact with an inner surface of a respective hole (via an insulator). Figures 9 and 11 shows contact between the outer surface of the rods only along a single continuous portion of the inner surface of the holes, similar to the arrangement shown in *Gibb*.

None of the configurations disclosed in *Sugita* provide for rod/hole arrangement in which an outer surface of the rods contact an inner surface of the hole at a plurality of discrete locations. Notwithstanding that the rods and holes shown in Figures 9 and 11 may differ in terms of shape (i.e., circular and elliptical shapes), an outer surface of the rods does not contact an inner surface of the holes at a plurality of discrete locations, as in the manner shown in Figures 12 and 13 of Applicant's disclosure, for example (showing circular and elliptical shaped registration apertures and posts).

Moreover, the inner surface of the holes and outer surface of the rods according to *Sugita* does not provide for a press-fit relationship, as the rods appear to have ample void space within their respective holes to accommodate positional shifting of the rods.

Further, with regard to Applicant's independent claims 1 and 44, it is unclear whether or not the holes of *Sugita* are situated within non-active areas of the MEA. Figure 11 appears to show holes within the active areas of the MEA. With regard to Figures 9 and 10, *Sugita* teaches that the rods penetrate into gas inlets and outlets of the fuel cell laminate 9, the laminate including a fuel cell (e.g., active area of the MEA). *Sugita* does not describe these inlets/outlets as being located in non-active areas of the MEA.

For at least the reasons discussed above, neither *Gibb* nor *Sugita* anticipates Applicant's independent claims 1, 44, and 71.

Dependent claims 2-3, 5, 6, 8, 11-17, 19, 21, 44-47, 49, 50, 53-57, 60, 61, 71-74, 76, and 77, which are dependent from independent claims 1, 44, and 71, respectively, were also rejected as being anticipated by *Gibb* and/or *Sugita*. While Applicant does not acquiesce with the particular rejections to these dependent claims, it is believed that these rejections are now moot in view of the remarks made in connection with independent claims 1, 44, and 71. These dependent claims include all of the limitations of the base claim and any

intervening claims, and recite additional features which further distinguish these claims from the cited reference. Therefore, dependent claims 2-3, 5, 6, 8, 11-17, 19, 21, 44-47, 49, 50, 53-57, 60, 61, 71-74, 76, and 77 are also not anticipated by *Gibb* or *Sugita*.

Accordingly, Applicant respectfully requests withdrawal of the anticipation rejections of the claims based on *Gibb* and *Sugita*.

Claims 4, 7-10, 48, 51-52 and 75 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Gibb*, as applied to Claims 1-3, 5-6, 11, 15-17, 44-47, 49-50, 53, 56-57, 60-61, 71, 74 and 76-77. Claims 4-10, 48-52 and 75-77 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Sugita*, as applied to Claims 1-3, 8, 11-16, 19, 21, 44, 46-47, 53-55, 57, 60-61 and 71-74. Claims 18, 58-59, 62 and 63 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Gibb*, as applied to Claims 1-3, 5-6, 11, 15-17, 44-47, 49-50, 53, 56-57, 60-61, 71, 74 and 76-77, and *Sugita*, as applied to Claims 1-3, 8, 11-16, 19, 21, 44, 46-47, 53-55, 57, 60-61 and 71-74, and in further view of U.S. Patent No. 6,358,641 to Mease (hereinafter "*Mease*"). Claims 20, 22 and 23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Gibb*, as applied to Claims 1-3, 5-6, 11, 15-17, 44-47, 49-50, 53, 56-57, 60-61, 71, 74 and 76-77, and *Sugita*, as applied to Claims 1-3, 8, 11-16, 19, 21, 44, 46-47, 53-55, 57, 60-61 and 71-74, and further in view of U.S. Patent No. 5,976,725 to Gamo et al. (hereinafter "*Gamo*").

Three criteria must be met to establish a prima facie case of obviousness. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art reference, or combination of references, must teach or suggest all the claim limitations. MPEP § 2142.

Each of dependent claims identified in the obviousness rejections above depend from independent claims 1, 44, and 71, respectively. Independent claims 1, 44, and 71 are not obvious in view of any one or combination of *Gibb*, *Sugita*, *Mease* or *Gamo* for at least the reason that the cited references fail to teach or suggest each and every limitation recited

in claims 1, 44, and 71. Furthermore, while Applicant does not acquiesce to the particular rejections of these dependent claims, it is believed that these rejections are now moot in view of the remarks made in connection with independent claims 1, 44, and 71. These dependent claims include all of the limitations of the base claim and any intervening claims, and recite additional features which further distinguish these claims from the cited references. Moreover, if an independent claim is nonobvious under 35 U.S.C. §103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Therefore, the dependent claims identified in the obviousness rejections above are not made obvious by *Gibb*, *Sugita*, *Mease* or *Gamo* or any combination thereof.

As such, Applicant respectfully requests withdrawal of the obviousness rejections of the dependent claims and notification that these claims are in condition for allowance.

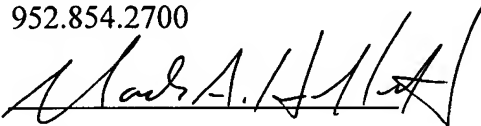
It is to be understood that Applicant does not acquiesce to the Examiner's characterization of the asserted art or Applicant's claimed subject matter, nor of the Examiner's application of the asserted art or combinations thereof to Applicant's claimed subject matter. Moreover, Applicant does not acquiesce to any explicit or implicit statements or conclusions by the Examiner concerning what would have been obvious to one of ordinary skill in the art or other such assertions. For example, Applicant disagrees with the Examiner's contention that a change in the shape of the registration apertures/posts is an obvious matter of design choice, since such a modification would have involved a mere change in the shape of a component. As discussed above, the differing shapes of the various registration aperture/post configurations disclosed and claimed in Applicant's disclosure provide for contact at a plurality of discrete press-fit locations, which represents significantly more than a mere change in shape. Applicant respectfully submits that a detailed discussion of each of the Examiner's rejections beyond that provided above is not necessary, in view of the clear absence of teaching and suggestion of various features recited in the Applicant's pending claims. Applicant, however, reserves the right to address in detail the Examiner's characterizations, conclusions, and rejections in future prosecution.

Authorization is given to charge Deposit Account No. 50-3581 (3MMM.562PA) any necessary fees for this filing. If the Examiner believes it necessary or helpful, the Examiner is encouraged to contact the attorney of record to discuss any issues related to this case.

Respectfully submitted,
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Date: February 28, 2007

By:

A handwritten signature in black ink, appearing to read "Mark A. Hollingsworth", written over a horizontal line.

Mark A. Hollingsworth
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